ALTERNATIVES TO BLANKET GUARANTEES FOR CONTAINING A SYSTEMIC CRISIS

by

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Abstract

This paper seeks to explain how policy actions undertaken at the outset of recent crises—particularly the issuance of extensive liquidity support and government guarantees—absorb off-budget fiscal resources and inappropriately constrain officials' subsequent options for restructuring their country's troubled financial and corporate sectors. Empirical evidence supports the commonsense view that the damage a crisis works on a country's financial sector and on its real economy is lessened by taking market-mimicking actions that promptly estimate and allocate losses during the early stages of a crisis. The most important steps are to plan to call a timeout to separate hopelessly insolvent institutions from potentially viable ones and to provide haircuts, guarantees, and liquidity support in ways that protect taxpayers and avoid subsidizing insolvent institutions' longshot gambles for resurrection.

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I. Introduction

In most countries, systemic crises are infrequent events. Their very infrequency means that, at the onset of each crisis, incumbent policymakers and their staffs seldom have either worked through (or even rehearsed) one before. This lack of experience tempts them to copy uncritically the policy responses that have recently been employed elsewhere.

Seat-of-the-pants policymaking is a process of trial and error. Because individual policymakers tend to downplay their errors, mistakes are unlikely to have been openly acknowledged by the governments that made them. For this reason, copied responses are apt to include a substantial number of suboptimal decisions (i.e., mistakes).

In principle, lenders and investors that voluntarily assume real and financial risks should reap the gains and bear the losses these risks generate. However, in crises, losers typically pressure government officials to induce other parties to share their pain.

Realistically, every government-managed disaster relief program is a strongly lobbied tax-transfer program for redistributing wealth and shifting risk away from the disaster's immediate victims. A systemic crisis externalizes – in depositor runs and in bank and borrower pleas for government assistance – a political and economic struggle over when and how losses accumulated in corporate balance sheets and in the risky portfolios of insolvent financial institutions are to be unwound and reallocated across society. This paper offers evidence that policy actions undertaken at the outset of recent crises – particularly the issuance of extensive liquidity support and government guarantees –absorb off-budget fiscal resources and inappropriately constrain officials' subsequent options for restructuring their country's troubled financial and corporate sectors.

The analysis draws on the experience of 12 recent crisis countries to benchmark how policy makers may manage the early stages of future crises more efficiently. Section I describes the alternative approaches that officials in these countries used to contain burgeoning crises and explains how different methods distribute responsibility for absorbing losses across banks, borrowers, depositors, current taxpayers, and future taxpayers. Section II reviews restructuring policies: the methods authorities have used to finance the losses and resolve institutional insolvencies in hopes of re-establishing a viable financial sector. Section III discusses the fiscal costs, macroeconomic damage, and unfinished financial restructuring that different crisis-containment and loss-redistribution strategies generated in the countries that adopted them. In part, the strategies chosen and the consequences that ensued can be explained by differences in the economic circumstances and contracting environments of the countries adopting them (Hovakimian, Kane, and Laeven, 2003; Laeven, 2004).

II. Costs and Benefits of Containment

Managing a systemic crisis is a multiperiod optimization problem that has three phases: immediate damage containment, medium-term industry restructuring, and a long aftermath (Claessens, Klingebiel, and Laeven, 1999). For implicit and explicit expenditures on containment strategies (C_S) to be optimal across the three phases, authorities must consider not only the net benefits these expenditures yield during phase one (B_1) but also take account of how these resources could have been used to increase the discounted value of the maximal restructuring benefits (R_1) achievable during the next two phases. Restructuring benefits may be modelled as a portfolio of subsequent policy options that are either preserved, opened, or closed by the containment policies

employed. The value of restructuring options depends to a first approximation on the value of the resources that are available to be spent on them (R_S) and on the volatility (V) of the subsequent banking environment. Assuming that authorities' decisionmaking horizon extends across all three phases, a time-consistent containment strategy would maximize a two-piece social welfare function:

$$W = B_1(C_S) + R_1(R_S, V), \tag{1}$$

subject to what officials presume initially to be a known budget restraint T on the fiscal resources that can be assigned to implicit and explicit crisis-management expense:

$$C_S + R_S = T. \tag{2}$$

Accountable and thoughtful crisis-containment strategies cannot easily be devised in the turmoil and conflict experienced during an actual crisis. Because the occurrence of a crisis strongly threatens the survivability of the incumbent government, it tends to shorten authorities' policymaking horizon. Officials are tempted to adopt containment policies that favor their supporters and to assign insufficient weight to how these policies harm the restructuring options available to decision makers in the second and third phase of the crisis.

Efficient crisis management begins with an admission that, like a massive heart attack, a systemic financial crisis can hit anyone anywhere and sometimes (albeit rarely) with little advance warning. Again, like a heart attack, the damage a crisis ultimately works on the financial sector and on the real economy can be contained by timely and skillful treatment. To be able to efficiently stop an emerging crisis from escalating, emergency response teams must be assembled in advance and trained on a standby basis (Kane, 2001). Emergency response teams cannot be asked to learn to use the financial equivalent of heart monitors and CPR techniques on the fly.

A banking crisis resembles a battlefield. Loss-generating banks wounded by open deposit runs are serious casualties. Supervisory personnel resemble emergency medical personnel ("paramedics") required to administer first aid to wounded banks under continuing hostile fire. Containment strategy, like battlefield medicine, seeks to locate the wounded, alleviate their suffering, and temporarily stabilize their condition.

During the containment phase, authorities seek to assess and arrest the damage the system is experiencing. Like paramedics on a battlefield, their duties consist of triage and treatment. They must identify treatment-worthy "victim" institutions and provide them with enough liquidity to restore public confidence in their continuing ability to meet legitimate customer demands. Alternative containment policies differ in the time and resources devoted to triage activity and in how interim liquidity is generated and allocated.

How much good government surgeons can accomplish depends very much on how well the battlefield medics have done their jobs. Medics must allocate their medicines, bandages, and time in an efficient manner. The sooner and more accurately they can identify moribund banks, the better.

The tools of a paramedic are kind words, painkillers, tourniquets, and bandages. Financial-sector restructuring resembles follow-up surgery that take place in a more sterile environment located some distance from the firing line. Restructuring entails careful diagnosis and a prioritized queuing for conclusive treatment. Restructurers use sophisticated methods to estimate asset values and employ less transient methods for restoring salvageable institutions' profitability and reputation. Their task is to identify, clean up, and consolidate the portfolios of insolvent banks and to see that the capital positions of the reconstituted firms is adequately patched up by financial surgery.

Containment treatments consist of standstill requirements, loans, credit lines, and guarantees. Standstills put the claims of various private parties on hold for a specified period of time. Other treatments create immediate or deferred government obligations. The credibility of these obligations depends on the government's ability to service them. This fiscal capacity depends in turn on officials' ability to scale back other planned expenditures and to collect new taxes.

Loans provide funds that can service customer demands for immediate liquidity. Credit lines are meant to curtail these immediate demands, by committing the government to provide future liquidity support as needed. Long-lasting commitments make it reasonable for customers to believe that they can successfully extract funds from troubled institutions at any time in the future that a better use arises.

Guarantees are credit enhancements. They allow wounded banks to borrow from other parties on the credit of their governments. The amount by which the guarantee lowers a bank's cost of funds measures the gross value of the "bailout" the guarantee delivers to the bank.

To the extent that government loans and credit lines are written at a below-market interest rate, the government is implicitly transferring free equity capital to the recipient. When the government does not plan to ask banks to fully compensate it for the costs of supporting the credit enhancement, some of this free equity capital is transferred from taxpayers to recipient banks. In what follows, we define treatment-generated capital to troubled banks as C_S, the bailout cost of the containment strategy adopted (Honohan and Klingebiel, 2003).

At the margin, increased expenditures on containment entail two tradeoffs. They reduce restructuring benefits and they promise to reduce volatility V during the second

phase at expense of raising V even more during the aftermath. Assuming $\frac{d^2W}{dC_S^2} < 0$, optimal containment policy would balance the opportunity costs and benefits of shifting the last dollar of available fiscal resources between containment and restructuring, so that:

$$\frac{dB_1}{dC_S} = -\frac{dR_1}{dC_S}. \tag{3}$$

Issuing blanket guarantees violates this condition and ultimately explodes the intertemporal budget restraint T by deferring all triage activity to the restructuring phase. By issuing blanket guarantees, a government hopes to avoid designating the liabilities of mortally wounded institutions as unworthy of government support. Whatever political and administrative benefits blanket guarantees may generate, keeping moribund institutions on life support generates excess costs over the crisis as a whole. Moreover, because it cedes control over future restructuring costs in part to the machinations of the country's weakest institutions, the loss tends to increase the longer the guarantees are kept in place.

Editorial cartoonists portray the workman who paints himself into a corner as a source of amusement. The hapless expression that is usually put on his face underscores the point that poor planning sours the options one can exercise later. The frustrated workman must either dance across the newly painted floor undoing the work he has just finished or wait idly for the paint to dry.

Although the drying time is more prolonged, governments that try to contain a spreading financial crisis by guaranteeing the liabilities of hopelessly insolvent banks place themselves in an equally difficult situation. Their first challenge is to convince depositors that they have the political will and fiscal capacity to make good on their

guarantees. Otherwise, their emergency response will be seen to be inadequate and relatively quickly compound the mess. As long as an insolvent bank remains open, its more savvy depositors can cut their losses by removing or collateralizing their deposits. These actions decrease the "haircut" that can be imposed on them when the bank's insolvency is finally resolved.

Assuming its guarantees are credible, the government faces three follow-on challenges: to control the amount of new debt that wounded institutions load onto the balance sheet of the government, to control how prudently guaranteed institutions invest the funds they receive, and to cut back or eliminate the guarantees once the restructuring process goes forward. Because banks whose credit is fully guaranteed can issue the functional equivalent of new government debt as long as they remain open, managers of insolvent banks are tempted to abuse their access to government assistance by taking on extremely high-risk projects. Although abusive "gambles for resurrection" reduce the nation's capital stock, they make sense to owners and managers of insolvent banks. The government guarantor accepts the full downside of these banks' future losses, and at least in the short run the guarantor is very likely to capture all but the most outsized positive returns.

Standstill Requirements. The simplest standstill requirement is a brief timeout taken to allow government forensic analysts and private auditors to assess the depth and character of troubled banks' financial wounds. The purpose of a several-day "banking holiday" is to allow supervisory medics time to diagnose individual-bank insolvencies and to recommend and impose preliminary haircuts on formally uninsured depositors and nondeposit creditors before these parties can liquidate or collateralize their exposure in the bank. (Governments might even specify in advance that deposits withdrawn during

the last day or days of a holiday-causing run would be reversed and subjected to haircuts as well.) In any case, the haircuts reduce the size of each bank's insolvency by trimming the enforceable size of its debts. This protects taxpayers by lessening the extent to which restructuring has to depend on taxpayer-financed loans, credit lines, and guarantees.

Using the holiday to prepare a program of limited guarantees and to write down insolvent banks' uninsured deposits to values that their earning assets can genuinely service promises to simultaneously restore public confidence both in the government and in the banking system. Examining the aftermaths of pre-1992 systemic crises in which governments assigned losses to depositors of insolvent banks, Baer and Klingebiel (1995) find that the positive benefits of reducing depositor uncertainty relatively quickly overcame the negative effects that surviving banks experienced from the deposit writedown.

The social goals of fairness and political stability are best served by minimizing the haircuts imposed on very small depositors. Small depositors are unlikely to be sophisticated enough to have discerned in timely fashion that their bank was not well run and, in any case, maintaining low-income households' ability to feed and house their families over the near future deserves the highest priority.

The same two goals dictate that, at the end of the holiday, larger uninsured depositors should be accorded a just degree of immediate fractional access to their transactable deposit balances (Kaufman and Selig, 2000). Of course, when a bank's portfolio proves particularly difficult to value, term depositors and nondeposit creditors (particularly foreign ones) might be forced to wait longer.

The speed and accuracy with which the size of the preliminary haircut can be determined depends on the extent to which appropriately trained valuation professionals

exist and can be deployed in emergency teams by the supervisory agency (Pomerleano, 2002; Kane, 2001). Especially in countries that combine weak accounting standards with feeble contract enforcement, a margin for error must be built into the haircut. To protect taxpayers, the margin should increase with the gap that exists between the complexity of the insolvent bank's positions and the skills of the appraisal team.

Explicit netting agreements and rights of set-off that foreign creditors enjoy in offshore jurisdictions tend to reduce the size of the haircut they can be made to absorb. Foreign creditors pose additional problems in that they may be better informed than domestic creditors and be able to move funds out of the country just before the crisis breaks. Even in the midst of a banking holiday, they may be able to undertake trades on multinational networks that further reduce their haircut exposure. The need to confront these problems explains why controls on capital movements are often included in crisis-containment strategies.

A depositor timeout that lasts for weeks or months is called a "deposit freeze." As long as a deposit freeze lasts, it curtails the liquidity of affected customers and reduces the nation's aggregate money supply. To minimize customer inconvenience and macroeconomic fallout, insured depositors should be granted access to their funds as soon as this becomes administratively feasible. It must be emphasized that crisis managers' administrative speed is not going to be rapid unless they have engaged previously in disaster-planning exercises and crisis-management simulations.

Broader timeout strategies are possible, and might prove useful in countries that lack U.S.-type bankruptcy protections for sustaining the circular flow of income and production. In an economy undergoing widespread corporate distress, a government might mimic U.S. bankruptcy protections and conserve productive assets by instituting a

grace period during which major creditors of any important nonbank corporation would be required to let the debtor delay payments of principal and interest due on existing bond or loan contracts. These delays would grant important borrowers and their creditors time to work out-- perhaps with the help of administrative courts or qualified mediators or arbitrators-- a replacement contract structure. The replacement contracts would cut back the obligations of damaged debtors to levels that they or their successor corporations or receivers can fairly and realistically be expected to service in the wake of the crisis.

Forcing private parties to renegotiate unenforceable contracts is sometimes termed a "bail-in strategy." As with the haircuts imposed on bank creditors, reducing the formal obligations of corporate debtors or converting them to equity positions before issuing government bailout loans or guarantees traps creditors that financed weak institutions into participating more fully in the intersectoral loss-absorption process. The strategy seeks to prevent better-informed private stakeholders in insolvent banks and businesses from using covenant and other contractual rights to seize collateral or accelerate their particular claims on banks and corporate customers at the expense of other claimants and of the level of current production.

Liquidity Support. Walter Bagehot's (1894) time-tested policy advice for managing aggregate liquidity during a systemic crisis is for the central bank to lend freely to solvent banks—albeit at a penalty interest rate and only on good collateral. This policy limits the taxpayer burdens that emergency lending can generate and creates an incentive for borrowing banks to repay their loans promptly when the crisis eases.

The obverse of this advice is for governments to avoid lending to insolvent banks *at all*, even on good collateral and certainly *not* at below-market interest rates. Collateralized loans to insolvent banks unfairly undermine the positions of depositors and

the deposit insurer by stripping away some of the bank's best loans and investments from the already undersized pool of assets on which other claimants must rely for repayment. Collateralized government loans to insolvent banks harm holders of these banks' pre-existing liabilities in two ways: *directly* by limiting their chances for repayment increasingly to recoveries from nonperforming assets and *indirectly* by generating incentives for borrowing banks to invest whatever net funds they can raise in excessively risky ways.

The time frame over which insolvent institutions extract liquidity support typically begins several months before the onset of systemwide depositor runs. The very noisy and unserviceable runs that bring a systemic crisis to a head are preceded by what Kane (2000) calls "silent runs" on individual institutions. The trigger for a silent run at an insolvent bank is not that the bank has accumulated unacknowledged losses large enough to wipe out its reported equity. Insolvency is merely a necessary condition. A silent run begins when the aggregate size of individual capital shortfalls becomes so large that savvy large-denomination depositors begin to doubt that the *government* has the fiscal capacity to honor its implicit and explicit guarantees of troubled institutions' outstanding liabilities.

Once individual depositors of an insolvent institution doubt the government's ability to meet its commitment to underwrite bank losses, they have an incentive to quickly collateralize their deposits or redeem them at par before a general run can close this option to them. The deeper they suspect a bank's insolvency to be, the stronger this incentive becomes. Even in financial centers, troubled institutions cannot easily sell customer loans for fair value prior to maturity. This means that an insolvent institution's first line of defense against a silent run is to take out collateralized loans secured by its

best assets from various counterparties, including especially the central bank and stronger institutions (often foreign ones).

As the fraction of depositors seeking redemption and collateralization grows, an insolvent bank's use of liquidity enhancements becomes larger and larger as well. For this reason, supervisory authorities should receive daily or weekly reports on growth in positions that may act as harbingers of crisis: collateralized deposits, repurchase agreements, and central-bank and foreign financing. Authorities' response to any flashing early warning signal should be to send valuation experts on site to investigate the quality of each ailing bank's loan portfolio and reporting system. Even though this fact-driven examination strategy might advance the onset of systemic pressure, it would constrain the ultimate size of aggregate insolvencies by making it harder for a failing institution to undertake costly last-ditch gambles for resurrection. It would also reduce the government's overall loss exposure by making it harder for sophisticated depositors to anticipate that they can escape their fair share of bank losses.

For a crisis government to embrace Bagehot's advice requires prompt access to the budgetary resources necessary to restructure insolvent banks and an ability to distinguish quickly between deeply insolvent banks and those that are solvent enough to be salvageable. Such governments also require the political and ethical strength to resist the pressures a crisis generates to rescue powerful special interests.

Country Evidence

Table 1 shows that, with the notable exception of Sweden, supervisory authorities in eleven of our twelve crisis countries found it hard to mobilize the political and budgetary support needed to follow Bagehot's advice. In most of the 1990s crises,

governments adopted crisis-management strategies that combined blanket guarantees with extensive and immediate liquidity support for insolvent institutions. The government provided extensive liquidity support to financial institutions at favorable prices and regardless of the depth of institutional weakness. Figure 1 also indicates that in six countries the silent run on some financial institutions started significantly before the crisis. Significant increases in liquidity support often appeared as early as 12 months before the crisis started. Table 2 shows that two countries (Argentina and Ecuador) introduced a banking holiday and a prolonged deposit freeze. However, neither used the breathing space of the banking holiday to put in place a comprehensive restructuring plan focused on identifying solvent from insolvent banks and supporting selectively the marginally solvent ones. Instead, both governments imposed the additional costs of illiquidity on depositors as deposits remained frozen over an extended period of time.

Ten governments provided unlimited guarantees to bank depositors and creditors aimed at restoring public confidence. Figure 1 and Table 3, however, indicate that unlimited guarantees were unsuccessful in restoring public confidence. Where successful, guarantees should reduce the level of outstanding liquidity support. In seven cases, liquidity support either remained at high levels or increased even further. It is also interesting to note, while unlimited guarantees were issued relatively close to the point in time when the crisis broke in emerging markets, in developed countries governments issued such guarantees only much later.

Using Sweden as a benchmark, Table 4 clarifies that in most (but not all) the 12 countries, individuals with the forensic accounting skills necessary to establish the comparative viability of troubled institutions were in short supply. Lack of such skills can markedly increase the size of the divergences between accounting and economic

values that a country's emergency valuation teams must strive to uncover. To augment country-level resources, supplementary auditing and valuation talent ought to be assembled and trained on a standby basis by financial-center governments, professional associations, and multinational institutions.

When slow and nonperforming loans represent a large percentage of a bank's portfolio, it is easy to exaggerate the level of accounting training needed to determine that an institution's ability to absorb losses has passed beyond prompt rehabilitation. Table 5 indicates that on average nonperforming loans were high in each of the 12 crisis countries. Even though crisis planners could benefit from strengthening their accounting standards and expanding local appraisal skills by targeted recruitment and training programs, efficient containment does not require precise valuation. Neutralizing lobbying pressure exerted self-interestedly by foreign lenders and overcoming domestic fiscal and political constraints appear to be more-pressing problems.

Lastly, it is important to note that empirical evidence shows that governments incur most of the fiscal costs of resolving the crisis during the containment phase. Honohan and Klingebiel (2003) show that much of the variation in fiscal costs of 40 crises observed in industrial and developing countries in 1980-97 is explained by differences in the way a government handled its liquidity crisis. The authors find that governments that provided open-ended liquidity support and blanket deposit guarantees incurred much higher costs for resolving the crisis. They also determine that increases in liquidity support appear to delay recovery and to make output losses larger—a finding confirmed by Bordo and others (2001).

III. Financial Sector Restructuring

In a systemic crisis, a country's financial system breaks down. "Restructuring" entails rearranging and strengthening the component parts to get this broken system working properly again.

Restructuring is complete when the losses that have been accumulated by insolvent institutions have been fully acknowledged and officially allocated across different sectors of society. The financial affairs of an insolvent firm can be rearranged in four basic ways: by closing it down and liquidating its assets; by merging it into a stronger foreign or domestic enterprise; by nationalizing it; or by assigning its nonperforming assets to an asset-management company (AMC). Executing any combination of these resolution techniques creates a contractual framework for allocating past losses and either renews or eliminates the firm's capacity for absorbing future losses.

The Triage Phase

Restructuring begins with triage decisions made at the start of the containment process. Authorities must determine which institutions can and cannot truly benefit from being put on interim life support (i.e., from receiving liquidity injections or expanded guarantees) and go on to formulate preliminary treatment plans for each type. Postponing either of these painfully hard decisions shifts losses and risks implicitly onto future taxpayers and increases the government's own need to appeal to foreign governments and multilateral institutions for external liquidity support.

The critical issue in managing the restructuring process is to understand and control the risk-taking incentives of insolvent institutions at all times. As long as the insolvency of an ailing institution is not formally resolved, its portfolio is being recapitalized implicitly at taxpayer expense. Because insolvency exhausts an owner's

liability for further losses, owners monitor managers of insolvent firms less closely. To the extent that government officials incompletely offset this deficiency in ownership discipline, managers are tempted to loot the enterprise and to waste the risk capital conveyed by government guarantees and liquidity support. On average, the longer an institution is allowed to operate in this artificial condition, the stronger these temptations become.

To minimize adverse effects, triage policy should establish a formal government claim on the equity of any and all banks that officials allow to operate in a weak state. In cases of deeply insolvent banks, authorities can usually best accomplish this by completely extinguishing the rights of former shareholders. In milder cases, authorities would be well-advised to demand a warrant position large enough to compensate taxpayers for the administrative and risk-bearing costs supervisors incur in overseeing the bank's subsequent recapitalization. In both situations, an efficient treatment plan must envision selling the government's equity claim to private parties more or less as soon as reliable information on asset values can be developed.

Medium-Term Restructuring

In most modern crises, the restructuring policies authorities have followed reveal a lack of prior disaster planning, a distaste for engaging in timely triage, and a reluctance to fully complete restructuring tasks (Kane, 2000). Reweaving the competitive fabric of the banking industry and negotiating new terms on nonperforming customer loans are inherently messy tasks. They are messy because they entail a number of difficult policy tradeoffs between speed, efficiency, and fairness.

Macroeconomically, officials in charge of the restructuring process can speed the nation's economic recovery by quickly identifying and recapitalizing viable banks and

simultaneously clearing bad banks and bad loans out of their way. Microeconomically, these officials are charged with two contradictory tasks: economizing on government funds by cutting deals that would maximize the asset values they realize and returning the assets they control into private hands as soon as possible.

Industry efforts to shape the new banking environment intensify the inescapable conflicts of interest under which financial regulators operate. How authorities react to self-serving lobbying pressure from the banking community is strongly influenced by the informational, ethical, and legal environment of the country in which they function. Unless a country's laws and norms of personal conduct can effectively constrain influence peddling, taxpayers are greatly disadvantaged. Most governments have been reluctant to offer taxpayers opportunities to observe and deter restructuring activity that threatens their interests.

Cross-country experience

Nonperforming Loans. In each of the 12 sample countries, Table 5 provides information on the average level of nonperforming loans at the height of the crisis. It also reports whether insolvent institutions were at least partially recapitalized by transferring their most-troubled assets to a government-sponsored asset-management company (AMC), and, if so, at what prices underwater assets were booked.

In principle, putting nonperforming loans at individual banks under unified management has numerous economic advantages. It is administratively convenient, promises to simplify the workout process by consolidating lender interests in related borrowers in a single dealmaker, and provides a way to economize on scarce workout skills. It also breaks ownership links between corporations and financial institutions—links that otherwise would impede restructuring. However, political difficulties in

prioritizing an AMC's conflicting objectives and in staffing and organizing the entity in an accountable way tend to curtail the effectiveness of the AMC approach (Kane, 1990). Furthermore cross-country experience shows that publicly owned and managed AMCs are not necessarily good vehicles for corporate restructuring. When a government institution is asked to restructure corporate assets, it is strongly pressured to avoid the workforce lay-offs that optimal restructuring entails (Klingebiel 2000).

Table 5 shows that an AMC was formed in eight of the 12 sample countries. In most cases, the AMC supplied capital to surviving institutions by purchasing the assets at a price substantially above their market value.

Purchasing assets at a subsidized price hides the economic cost of the associated recapitalization from the public and relieves the government of the need to pass its best estimates of this cost formally through the appropriations process. It breaks the connection between the amount of capital the government formally invests in the AMC and the amount of money needed to complete its job. This defect in transparency also distorts the incentives of AMC managers. AMC ability to recover economic value is understated by being benchmarked against the unrealistically high purchase price at which the AMC is forced to carry its assets. AMC managers are asked to fund the deficit that the AMC is bound to incur on each asset sale and to shoulder political blame for doing this. With oversight boards and auditors miscalculating AMC profits from asset sales, AMC managers become particularly reluctant to reprivatize their most depressed assets.

Table 5 shows that, where these weaknesses in accountability exist, up-to-date figures on the disposal of assets prove harder to gather and the reprivatization of troubled assets proceeds more slowly. In countries where the AMC booked at least some of the

assets it absorbed at estimated market values (Sweden, Finland and Malaysia), asset sales proceeded on a notably more transparent and more rapid basis. In two of these three countries, the disposition of assets was helped along by a relatively strong legal and institutional framwork.

Still, even when an AMC's portfolio can be promptly marked to market, the AMC's limited life restricts the government's ability to hire experienced personnel and to incentivize them to liquidate the AMC's portfolio quickly. The quicker the AMC finishes its mission, the sooner its employees must look for new jobs. Reluctance to work oneself out of a job reduces the appeal of bulk sales and strings out negotiations with troubled borrowers.

Resolving the Insolvencies of Individual Banks. The first two columns of Table 6 summarize the number of institutions that regulators shut down or merged in crisis countries. The third column indicates whether would-be foreign owners participated in the resolution process. The fourth column tells us that the national government directly assisted bank borrowers in only three countries: Ecuador, Korea and Mexico. The last three columns indicate the number of institutions that were formally nationalized, whether government funds were explicitly injected into insolvent banks, and whether banks were deliberately allowed to operate in an undercapitalized condition.

Although the effects of the Argentine deposit freeze cannot be evaluated at this mid-2002 writing, in every other country nationalizations, capital injections, and capital forbearance played a central role in the recapitalization process. Government assistance was supplied even in countries (Ecuador, Malaysia, and Sweden) that had no explicit deposit insurance scheme when the crisis broke. This underscores the point that implicit government guarantees of bank liabilities exist *de facto* in every country. Even when

countries place formal limits on deposit coverage, crisis pressures make it unwise for officials to enforce them. Table 7 indicates that 10 of the 12 countries still have a lot on their plates. They need to complete financial and corporate restructuring, to dispose of assets in public AMCs, and to reprivatize nationalized banks. The Japanese crisis is the longest in duration, lasting almost a decade. Yet, Japanese banks remain burdened with non-performing loans. Only in Sweden and Finland—whose banking crises started in the early 1990s—have non-performing loans returned to pre-crisis levels and the loans transferred to AMCs largely reassigned. Figure 2 shows that these are the only two countries that saw the real value of bank and other corporate stock recover and hold their precrisis values after issuing guarantees.

IV. Crisis Costs

Financial crises generate two types of economic costs. The first category is the direct fiscal cost imposed on taxpayers from government efforts to contain and clean up institutional insolvencies. The second category is the cumulative loss of real capital and output that society experiences from crisis-generated disruptions in macroeconomic and financial activity.

Direct Fiscal Costs

Expressed as a percentage of GDP, Table 8 presents the aggregate size of acknowledged taxpayer support recorded in each government's fiscal accounts through 2001. The costliest crises occurred in Indonesia, Thailand and Korea, while reported fiscal costs proved lowest in Sweden, Finland, Ecuador, and Malaysia. However, fiscal costs in Ecuador are severely understated. Ecuador nationalized insolvent institutions without stopping to mark down the book value of transferred assets to "fair" or market

values. The result is that Ecuador has recorded fiscal costs only when and as the assets are restructured. Reluctance to accomplish this promptly drives a wedge between budgeted costs and the present discounted value of the losses that taxpayer-owners must expect eventually to absorb.

Sweden, Finland, and Malaysia are the only countries that used fair values to record some or all of the underwater assets being transferred to their AMC (Table 4). It is striking that these countries—whose book-keeping practices most accurately measure taxpayer burdens—show markedly smaller expenses than countries whose accounting records fudge the value of continuing government commitments. It is hard to resist the hypothesis that these better results trace to the better incentives established by the accountability and deal-making flexibility that market-value accounting conveys to personnel responsible for the restructuring program. Of course, incentives and accounting standards are correlated with the strength of a country's legal and institutional framework. Altruistic cultural norms and strong contract enforcement reinforce regulatory efforts to curtail gambling for resurrection.

Crisis-Induced Disruption of Macroeconomic Activity

In a crisis, the market values of many loans and of nonfinancial assets move below (often far below) the value of the funds that owners paid to acquire them. The fact that many businesses cannot service their loans indicates that the real capital acquired with loan proceeds is not producing enough earnings to justify the investment.

Nonperforming loans are typically concentrated in sectors that have overbuilt their productive capacity. Macroeconomically, the resources that constitute this excess capacity must be transferred to other uses and marked down to the discounted value of the earnings they can plausibly promise to generate in their most favorable use.

Throughout the period during which the resource transfer takes place, aggregate real output and employment are temporarily depressed.

It is not possible to measure precisely either the endpoints of crisis-induced declines in output and employment or how much of the declines in output and employment observed during a crisis might be due to other forces. Focusing on 47 crises experienced during 1980-1998, Hoggarth, Reis, and Saporta (2001) have estimated the cumulative percentage of GDP lost during all or part of seven of our 12 crisis episodes. They construct three alternative measures of output loss, each stated as a percentage gap (GAP_i, i=1, 2, 3) between the levels of GDP actually observed during the crisis period and a different way of benchmarking the levels that might have developed had the crisis not occurred.

For each country, Table 9 presents these alternative estimates for years that overlap our sample. The last column of the Table reports the arithmetic mean for the two or three alternative measures available. Only in Finland and Japan does the order of magnitude of the estimated loss prove sensitive to the choice of benchmarking procedure.

With an estimated mean of 42.2 percent of output loss, the Japanese crisis is both the longest and the one that sacrificed the most GDP. Across countries, the average output loss correlates positively with fiscal cost and crisis duration. These correlations strongly support our central hypothesis. The data indicate that the containment and restructuring phases of a systemic crisis prove less disruptive when fiscal costs are managed efficiently and the restructuring program establishes incentives that moves the recapitalization process forward promptly. For these conditions to be realized, restructuring must begin during the containment phase and be governed as far as possible by market-based measures of restructuring performance.

V. Summary Implications: Well Begun is Half Done

Once a systemic crisis recedes, individual governments find little benefit in investigating carefully and objectively whether and how they might have handled their crisis better. Instead, they have every incentive to exaggerate the wisdom and success of whatever policies they chose to follow.

Insiders' unwillingness to admit their various mistakes and gambles forces us to try to identify good and bad policies by comparing the effects of the variation in crisis-management strategies across countries. It is hard to put data on strategies and effects on a common basis, which means that our study is far from definitive. The information we compile is incomplete and the number of countries we study is small. Nevertheless, the countries were chosen in an unbiased way and the results support the commonsense theory that the financial and real damage a crisis actually wreaks can be lessened by adopting market-mimicking policies. Such policies seek to estimate losses during the triage process and to allocate these losses promptly during the containment and restructuring phases. The single most important steps entail prior planning and commitment to the plans that are formulated. Policymakers must be ready to take the time to separate hopelessly insolvent institutions from potentially viable ones and to provide haircuts, guarantees, and liquidity support in ways that protect taxpayers. Not to plan for crises prolongs and deepens the disruption by subsidizing insolvent institutions' longshot gambles for resurrection.

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TABLE 1
LIQUIDITY SUPPORT GRANTED TO INSOLVENT INSTITUTIONS IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	Did the government issue extensive liquidity support to insolvent institutions?	Amount and Character of liquidity support	Which government institution issued liquidity support?	Conditions surrounding support
Argentina 12/2001-present	• Yes	• 6.2% of GDP. The central bank provided capital equivalent to the capital in the banking system.	• Central bank.	• None
Ecuador 11/1998-present	• Yes	• Central bank provided large amount of liquidity support to banks from Dec. 1998 through 1999. Issued bonds to banks amounting to 6.3% of GDP.	• Central Bank	• None
Finland 9/1991-12/1994	• Yes	• Central bank gave liquidity injections to failing savings banks in the form of loans at above market rate.	• Central Bank	• None
Indonesia 7/1997-present	• Yes	• $21.7 billion (17% GDP) • Liquidity support was in the form of overdrafts (i.e., credit lines).	• Bank of Indonesia (Central Bank)	• None
Japan 6/1991-present	• Yes	• For the first 7 years of the crisis, authorities attempted to keep the banking system afloat by providing liquidity loans.	• Loans required the approval of the Policy Board of the Bank of Japan.	• Until 1999 the interest rate on the these unsecured loans was 0.75% (25 basis points above the official discount rate. In April 1999 the rate was raised to 1.0%.
Korea 7/1997-present	• Yes	• $23.3 billion (5% GDP) in the form of deposits and loans.	• Bank of Korea (Central Bank)	
Malaysia 4/1997-present	• Yes	• 9.2 billion (13.2 % of GDP) in the form of deposits.	• Bank Negara Malaysia (Central Bank)	
México 12/1994 – 12/1997	• Yes	• A special dollar credit window was established at the central bank. Loans were extended at 25 percent and 17.5 percent of the market rate.	• Central Bank	

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Russia 8/1998-12/1999	• Yes	• Central Bank offered liquidity support to all banks, but most of the support went to state banks.	• Central Bank	• None
Sweden 11/1991-12/1994	• No	N.A.	N.A.	N.A.
Thailand 3/1997-present	• Yes	• $24.1 billion (20% GDP) in the form of loans and capital injections.	Financial Institutions Development Fund (FIDF)	• None
Turkey 11/2000-present	• Yes	• $6 billion (3% of GDP)	Central Bank	• None

Sorce: Author's Compilation
N.A.= Not applicable

TABLE 2
CONTAINMENT POLICIES EMPLOYED IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	Was a bank holiday declared at the onset of the crisis (and what was the timing and duration of the holiday)?	Was an extended deposit freeze imposed (and what was the timing and duration of the freeze) and the type of deposit and bank liabilities frozen	Did a formal deposit insurance scheme exist what was coverage in terms of GDP per capita?	Was a blanket government guarantee issued at beginning of crisis and what was the coverage?	Rolling back of guarantees	Were losses imposed on depositors?
Argentina 12/2001-present	• Yes, a 2-day bank holiday on Feb. 2, 2002 after the government's freeze on bank deposit was declared unconstitutional • New bank holiday declared on April 22, 2002 for 5 days, covering all banking liabilities and foreign exchange holdings	• Yes • Bank deposits frozen initially for 90 day on Dec. 2001, but it was extended indefinitely. On April 26, 2002 banks were allowed to provide limited services • Saving deposits frozen with maximum with draw of 1,200 pesos per month or voluntary transformation into a dollar-denominated bond	• Yes, private deposit insurance was set up in 1995 with coverage of 3.8 times GDP per capita	• No	N.A.	• Yes. Losses to depositors from exchange rate conversion in March 2002 at rate of 1.4 pesos to dollar and subsequent loss of value of the peso
Ecuador 11/1998-present	• Yes • March 11, 1999: bank holiday declared for one week	• Yes, Bank deposits frozen for 6 months in March 11, 1999. • Authorities began to unfreeze deposits in August 1999; all deposits unfrozen by March 2000 • Deposit liabilities onshore and offshore accounts affected. Offshore liabilities were synonymous with onshore banks if no actual bank existed offshore • Partial freeze for sight deposits and passbook savings • Total freeze on time deposits and CDs	• Yes, deposit insurance set up in 1998 with coverage of 2.28 times GDP per capita	• Yes, issued in January 1999 • All bank liabilities	• Guarantee was to expire in three years from issuance (January 2002), but still in existence.	• Yes, depositors suffered losses since government was unable to honor its guarantee

TABLE 2
CONTAINMENT POLICIES EMPLOYED IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	**Was a bank holiday declared at the onset of the crisis (and what was the timing and duration of the holiday)?**	**Was an extended deposit freeze imposed (and what was the timing and duration of the freeze) and the type of deposit and bank liabilities frozen**	**Did a formal deposit insurance scheme exist what was coverage in terms of GDP per capita?**	**Was a blanket government guarantee issued at beginning of crisis and what was the coverage?**	**Rolling back of guarantees**	**Were losses imposed on depositors?**
Finland 9/1991-12/1994	No	• No	• Yes, revised in 1992 with coverage of .85 times GDP per capita	• Yes, issued in Feb. 1993 covering all bank commitments	• Expired in December 1998	• No
Indonesia 7/1997-present	No	• No	• Yes	• Yes Issued in January 1998 covering all bank commitments.	• Intended to last 2 years, with a six month notification period before it is to be lifted. • Guarantee is still in existence	• No

TABLE 2
CONTAINMENT POLICIES EMPLOYED IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	**Was a bank holiday declared at the onset of the crisis (and what was the timing and duration of the holiday)?**	**Was an extended deposit freeze imposed (and what was the timing and duration of the freeze) and the type of deposit and bank liabilities frozen**	**Did a formal deposit insurance scheme exist what was coverage in terms of GDP per capita?**	**Was a blanket government guarantee issued at beginning of crisis and what was the coverage?**	**Rolling back of guarantees**	**Were losses imposed on depositors?**
Japan 6/1991-present	• No	• No	• Yes, enacted in 1971 with coverage of 0.18 times GDP per capita GDP	• Yes, issued in June 1996 covering all depositors and creditors	• Expired in March 2002 and replaced by a formal scheme that covers deposits up to 10 million yen .	• No
Korea 7/1997-present	• No	• No	• Yes, enacted 1996 with coverage of 1.2 times GDP per capital GDP	• Yes • Issued in Nov. 1997 covering all deposits and most creditors of financial institutions and all banks' international liabilities	• The guarantee expired at the end of 2000. Since Jan. 2001 a limited protection scheme has been adopted • Level of insurance set at Won 50 million per person for each financial institution	• No

TABLE 2
CONTAINMENT POLICIES EMPLOYED IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	**Was a bank holiday declared at the onset of the crisis (and what was the timing and duration of the holiday)?**	**Was an extended deposit freeze imposed (and what was the timing and duration of the freeze) and the type of deposit and bank liabilities frozen**	**Did a formal deposit insurance scheme exist what was coverage in terms of GDP per capita?**	**Was a blanket government guarantee issued at beginning of crisis and what was the coverage?**	**Rolling back of guarantees**	**Were losses imposed on depositors?**
Malaysia 4/1997-present	• No	• No	• No	• Yes, issued in Jan. 1998 covering all commercial banks, finance companies and merchant banks, including overseas branches of domestic banking institutions	• No explicit expiration date	• No
México 12/1994 – 12/1997	• No	• No	• Yes • Enacted in 1986 and revised in 1990.	• Yes, issued Jan. 1995 covering all bank liabilities, including inter-bank deposits, but excluded subordinated debt.	• Roll back to start in 2003	• No
Russia 8/1998-12/1999	• No	• No	• No	• No • Yet Sberbank, a state bank controls 80% of deposits in the banking system.	N.A.	• Yes • Depositors in private banks suffered losses. Individual depositors were able to recover their money at 25%-75% discounts.

TABLE 2
CONTAINMENT POLICIES EMPLOYED IN TWELVE CRISIS COUNTRIES

Country and Crisis Dates	**Was a bank holiday declared at the onset of the crisis (and what was the timing and duration of the holiday)?**	**Was an extended deposit freeze imposed (and what was the timing and duration of the freeze) and the type of deposit and bank liabilities frozen**	**Did a formal deposit insurance scheme exist what was coverage in terms of GDP per capita?**	**Was a blanket government guarantee issued at beginning of crisis and what was the coverage?**	**Rolling back of guarantees**	**Were losses imposed on depositors?**
Sweden 11/1991-12/1994	• No	• No	• No	• Yes • Issued in Dec. 1992 covering all bank commitments.	• In July 1996, a limited deposit insurance scheme was adopted.	• No
Thailand 3/1997-present	• No	• No	• No	• Yes • Issued July 1997. covering depositors and creditors of both domestic and foreign institutions.	• No explicit expiration date.	• No
Turkey 11/2000-present	• No	• No	• No	• Yes • Deposits fully guaranteed	• No	• No

TABLE 3
THE IMPACT OF BLANKET GUARANTEES ON LIQUIDITY SUPPORT

Country	Date of beginning of banking crisis	Issuance of guarantee (months after beginning of the crisis)	Liquidity return to pre-crisis level		Issuance of guarantee successful in restoring public confidence reflected in sharp and permanent decrease of outstanding liquidity support
			From the beginning of crisis	From the issuance of guarantee	
Argentina	December 2001	No	N.A.	N.A.	N.A.
Ecuador	November 1998	Yes, in January 1999 (2 months)	14 months	12 months	Unclear, initial significant decline but slow decline thereafter
Finland	September 1991	Yes, in February 1993 (17 months)	28 months	11 months	No, liquidity support had already decreased significantly before the issuance of a guarantee
Indonesia	July 1997	Yes, in January 1998 (6 months)	19 months	13 months	No, liquidity support significantly increases and only leveled off 13 months after issuance of guarantee
Japan	June 1991	Yes, in June 1996 (60 months)	No	No	No, liquidity support subject to wild swings, and increases after issuance of guarantee at times
Korea	July 1997	Yes, in November 1997 (4 months)	20 months	16 months	No, liquidity support increases sharply and returns to lower levels 16 months after issuance of guarantee
Malaysia	April 1997	Yes, in January 1998 (9 months)	17 months	8 months	Yes, sharp decrease of liquidity support in aftermath of the issuance of a guarantee
Mexico	December 1994	Yes, in January 1995 (1 month)	25 months	24 months	Unclear, liquidity support already declined significantly before issuance of guarantee
Russia	August 1998	No	N.A.	N.A.	N.A.
Sweden	November 1991	Yes, in December 1992 (13 months)	24 months	11 months	No, liquidity support had already decreased sharply before the issuance of a guarantee
Thailand	March 1997	Yes, in July 1997 (4 months)	No	No	No, liquidity support continues to increase after issuance of guarantee
Turkey	November 2000	Yes, in November 2000 (0 months)	No	No	No, liquidity support continues to rise significantly after issuance of guarantee

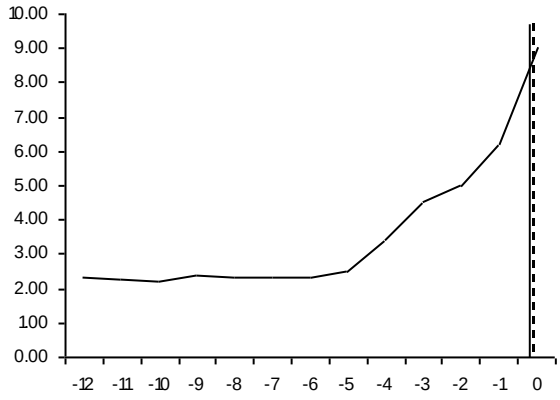
N.A.: Not Applicable
Source: Authors' calculation and assessment.

Figure 1

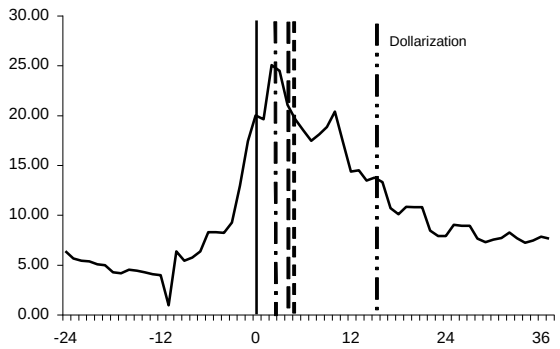
Claims on the Financial System from the Monetary Authority / Total Deposits (%)

The following charts illustrate the monthly evolution of the Claims on the Financial System from the Monetary Authority scaled by Total Deposits in periods of banking crises. Month 0 indicates the month of the beginning of the crisis, 1 (-1) indicates one month after (before) the beginning of the crisis, and so on. There are also depicted vertical lines showing events such as beginning and ending of the crisis (——), issuance of blanket guarantees (— · —), impositions of deposit freezes (— —) and bank holidays (- - - -).

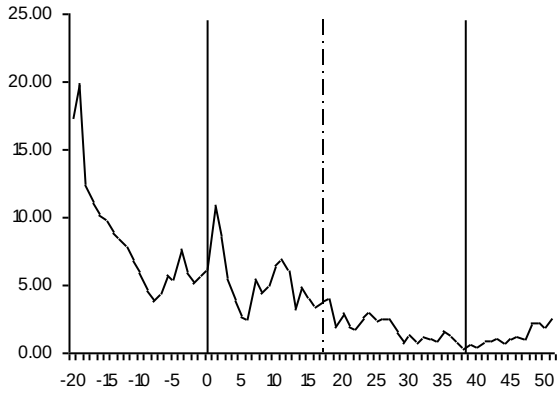
Argentina



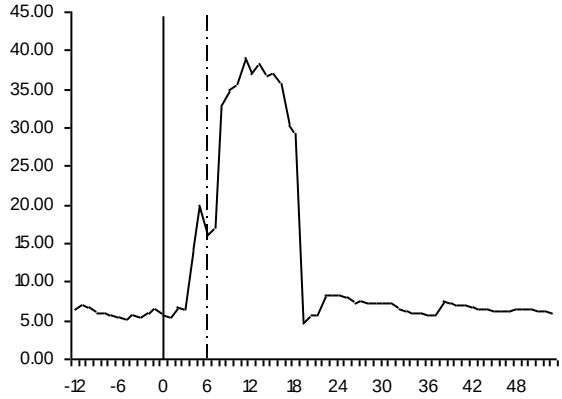
Ecuador



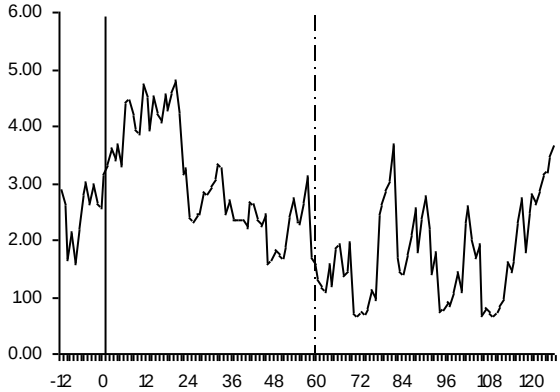
Finland



Indonesia



Japan



Korea

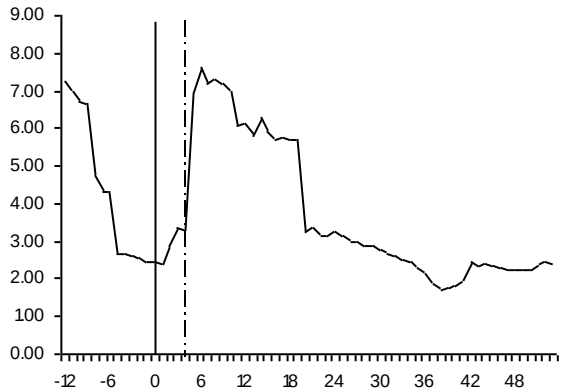
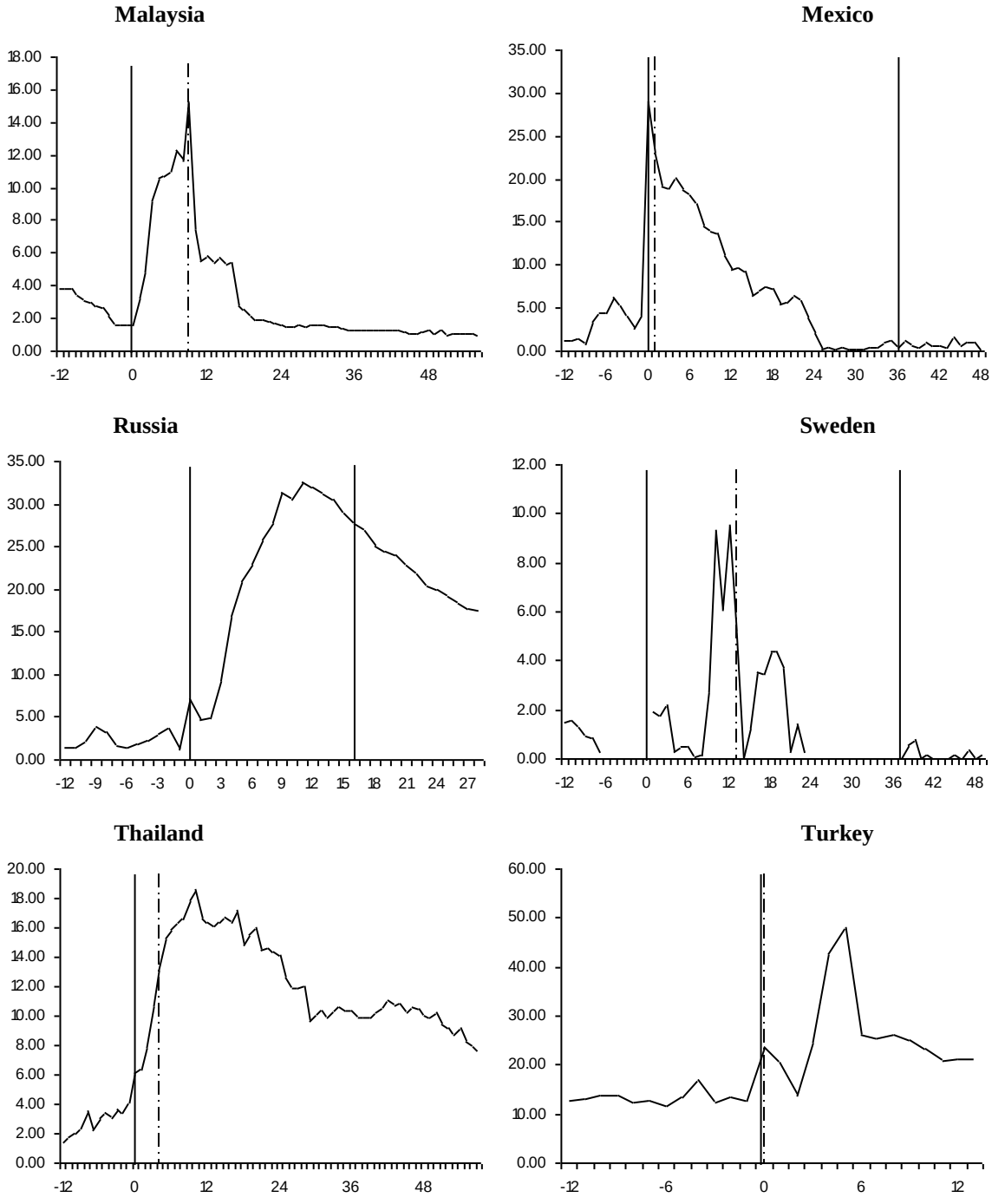


Figure 1 (Continued)

Claims on the Financial System from the Monetary Authority / Total Deposits (%)



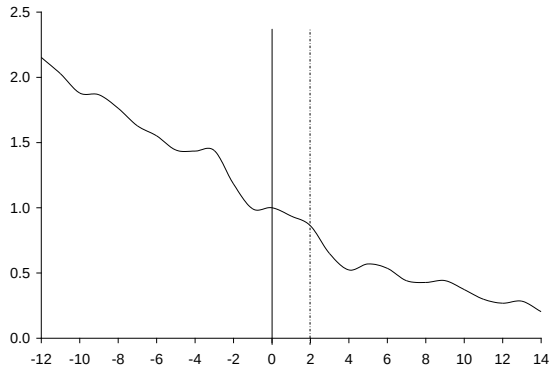
Sources: IMF International Financial Statistics, World Bank's World Development Indicators and Bank of Korea and Bank of Sveriges Riksbank.

Figure 2

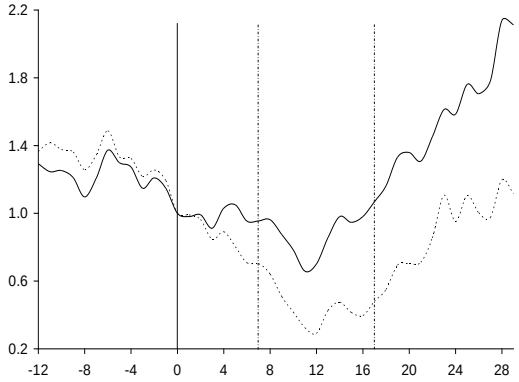
The following charts illustrate the monthly evolution of the stock market index in 11 of the 12 countries (Russia is omitted) in periods of banking crises. Month 0 indicates the month of the beginning of the crisis, 1 (-1) indicates one month after (before) the beginning of the crisis, and so on. There are also depicted vertical lines showing the beginning of the crisis (——), and the issuance of blanket guarantees (_ . _). The times of the beginning of the crisis and the issuance of blanket guarantees are also given in the bracket. The solid line indicates stock market index and the dot line indicates the banking or financial index.

Real stock market index (value of crisis month equals one)

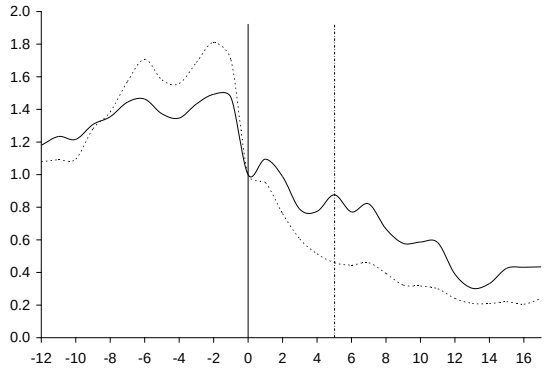
Ecuador (11/98, 01/99)



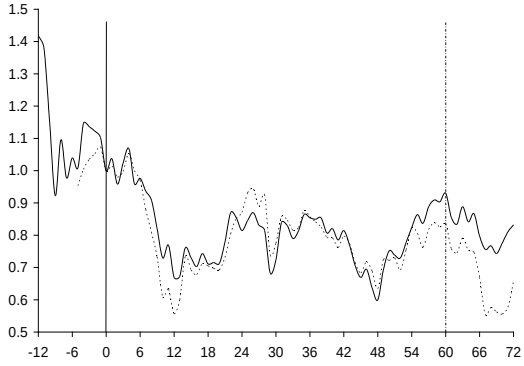
Finland (09/91, 04/92 & 02/93)*



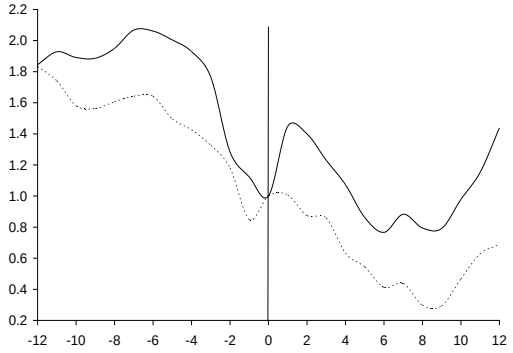
Indonesia (08/97, 01/98)



Japan (06/91, 06/96)



Korea (12/97, 12/97)



Malaysia (07/97, 01/98)

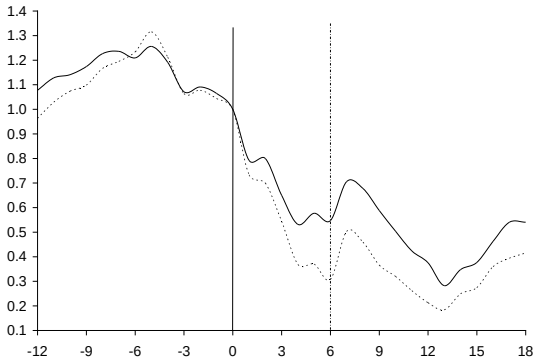
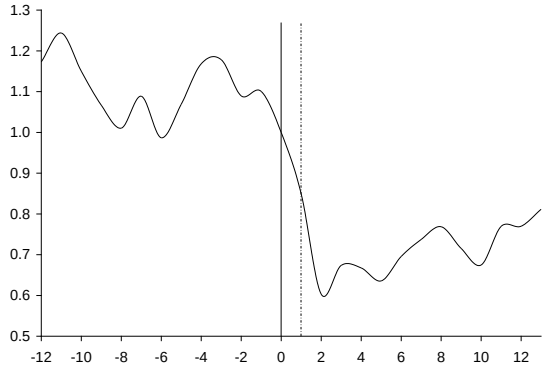


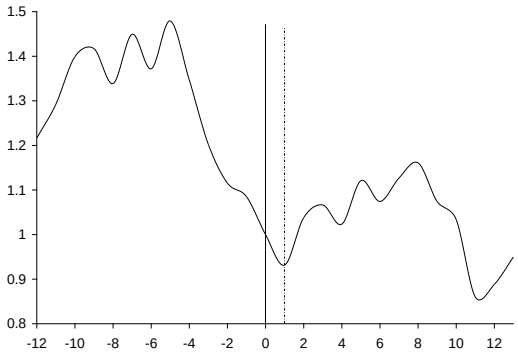
Figure 2 (Continued)

Real stock market index (value of crisis month equals one)

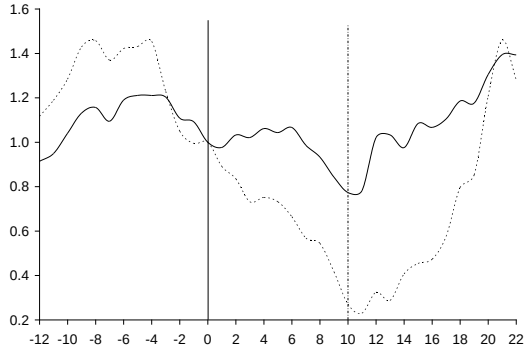
Mexico (12/94, 01/95)



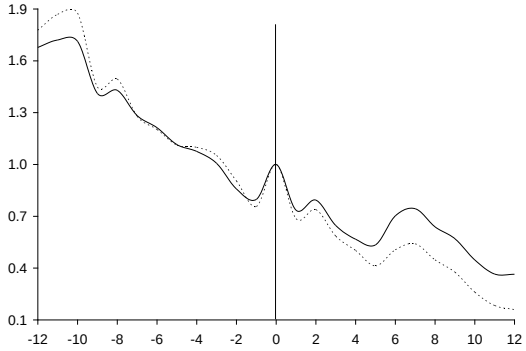
Norway (12/90, 01/91)



Sweden (11/91, 09/92)



Thailand (07/97, 07/97)



Turkey (11/00, 11/00)

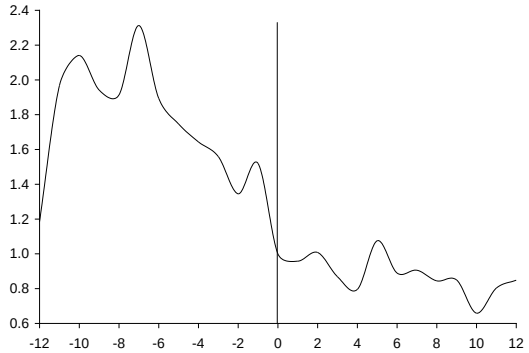


TABLE 4

RESTRUCTURING PROFESSIONALS PER MILLION OF POPULATION IN TWELVE CRISIS COUNTRIES

Crisis Country	Appraisers	Insolvency Experts	Actuaries	Auditors
Argentina	…	0.92	4.54	….
Ecuador	…	…	…	…
Finland	28.96	…	18.73	100
Indonesia	6.65	0.02	0.03	20
Japan	44.96	0.04	6.73	100
Korea (Rep. of)	36.47	0.02	0.23	70
Malaysia	21.50	1.12	…	480
Mexico	30.62	0.02	1.95	150
Russia	27.48	…	…	…
Sweden	56.38	1.58	27.74	410
Thailand	…	0.13	0.21	50
Turkey	…	…	0.85	52.45

Sources: Except for Turkey, the data come from two sources. The first of three columns are taken from Pomerleano (2002) and refer to the year 2001. The last column comes from Bhattacharya, Daouk, and Welker (2002) and multiplies 1996 figures that were reported per 100,000 population by 10.

Data for Turkey were collected in May 2002 by Başak Tanyeri from that country's Undersecretaries for Trade and the Treasury. Auditors are defined as supervisory auditors who are authorized to sign audit statements. The number of licensed accountants is almost 17 times this figure.

TABLE 5
LEVEL AND RESOLUTION POLICIES FOR NONPERFORMING LOANS IN CRISIS COUNTRIES

Country and Crisis Dates	**Percent of NPL to total loans at peak of crisis (share of total loans).**	**Was a publicly owned centralized Asset management company created?**	**Price and amount of assets transferred (as a percentage financial system assets)**	**Type of asset transferred**	**Amount of assets disposed of by AMC**	**Impediments to AMC and Outcome.**
Argentina 12/2001-present	18 (Mar. 2002)	No	N.A.	N.A.	N.A.	N.A.
Ecuador 11/1998-present	31.3 (end 2000)	No	N.A.	N.A.	N.A.	N.A.
Finland 9/1991-12/1994	13	• Yes, named Arsenal and created in 1993.	• 5.2% of financial system assets transferred. • Assets t transferred from nationalized banks at above market value.	• Real estate (33.7%) client receivables (41%) and assets under management (25.3%).	• At the end of 1997, Arsenal had disposed off more than 64% of assets	• Transfer of diverse types of assets, which made it difficult to use wholesale divestiture techniques
Indonesia 7/1997-present	65-75	• Yes, named IBRA and created in 1998	• 82.2% of financial system non-performing loans • Assets transferred at higher than their market value	• All types of assets including assets from defunct and nationalized banks	• 4.2% as a percent of NPL acquired (as of June 2001).	• IBRA had to deal with a large share of diverse types of assets including corporate assets amounting to 50% of GDP • IBRA was also hampered by a weak legal and institutional framework • IBRA was encumbered by its lack of independence and large share of politically connected assets

TABLE 5
LEVEL AND RESOLUTION POLICIES FOR NONPERFORMING LOANS IN CRISIS COUNTRIES

Country and Crisis Dates	Percent of NPL to total loans at peak of crisis (share of total loans).	Was a publicly owned centralized Asset management company created?	Price and amount of assets transferred (as a percentage financial system assets)	Type of asset transferred	Amount of assets disposed of by AMC	Impediments to AMC and Outcome.
Japan 6/1991-present	35.1	• Yes, named RCC. Created in 1999.	• Loans purchased at 4% of book value, but plans in May 2002 include raising the percentage to 8-10% of book value. • Small and insignificant amount of assets transferred.	• RCC buys bad debt from insolvent institutions.	N.A.	• RCC has been slow to dispose of NPL.
Korea 7/1997-present	30-40	• Yes, named KAMCO	• 68.6% of NPL transferred • KAMCO purchased assets at an average discount of 43% of the book value	• Secured and unsecured loans. It is estimated that 50% of NPL are related to factories or businesses.	• 50.2% of NPL acquired (as of May 2001). • Part of the assets disposed were sold to government-owned bank	• Asset disposal somewhat hampered by legal framework. • Real estate assets were relatively more easy to dispose of
Malaysia 4/1997-present	25-35	• Yes • Named Danaharto and created 1998	• 41.5% of financial system assets Market price • Purchased assets valued by independent auditors.	• Loans larger then 5 million ringgit and mostly loans secured by property or shares.	• 80.7% as a percent of NPL acquired (as of March 2001)	• Effective bankruptcy and foreclosure laws • Asset disposition also helped by the fact that most of assets were related to real estate
México 12/1994 – 12/1997	18.9	• Yes • Named FOBAPROA and created in 1995	• 17% of banking system's assets • Transfer occurred at book value inasmuch as assets were not revalued prior to transfer	• The NPL loans transferred included consumer, mortgage and corporate loans	• By end 1998 FOBOPROA had sold only 0.5% of transferred assets	• Politically connected loans transferred were difficult for the agency to handle • Lack of functioning bankruptcy system

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Russia 8/1998-12/1999	22	• No • Created in 1999 an entity called ARKO acquired controlling stakes in decapitalized banks and managed bad assets	N.A.	N.A.	N.A.	N.A.
Sweden 11/1991-12/1994	18	• Yes, named Securum/Retriva and created in 1992	• 7.4% of financial system assets • Before assets were transferred to AMCs, they had to go through valuation process to assess true market value • One-off process, non-performing assets of Norbanken & Gota Bank transferred to Securum and Retriva, respectively.	• 80 percent of a assets were real estate loans, bank loans and share portfolio	• 98% of a assets were sold after 5 years	• Legal environment was adequate regarding bankruptcy and foreclosure laws • Most of assets were commercial real estate that were relatively easy to dispose of.

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Country and Crisis Dates	**Percent of NPL to total loans at peak of crisis (share of total loans).**	**Was a publicly owned centralized Asset management company created?**	**Price and amount of assets transferred (as a percentage financial system assets)**	**Type of asset transferred**	**Amount of assets disposed of by AMC**	**Impediments to AMC and Outcome.**
Thailand 3/1997-present	33	• Yes • Named FRA	• 29.7% of financial system assets	• Assets from failed finance companies including non-core physical assets and core assets, which include hire purchase contracts, residential mortgage loans and business loans.	• 56% of assets sold to private investors and 28% to another publicly owned AMC.	• FRA sold more then a quarter of its assets to another publicly owned AMC with the aim of restructuring the assets before their sale. • FRA was eventually not allowed to sell assets to the private sector at market value.
Turkey 11/2000-present	19.2 as of July 2001	• No	N.A.	N.A.	N.A.	N.A.

TABLE 6
METHODS USED FOR RESOLVING DISTRESSED INSTITUTIONS

Country and Crisis Dates	Number of Banks and other financial institutions shut down	No. of Banks Nationalized	Bank Mergers	Public Funds injected during recapitalization (conditions attached and type of recap)	Extent of injections of private foreign capital	Did Capital Forbearance Occur	Was assistance provided to bank borrowers?
Argentina 12/2001-present	• 1 bank, subsidiary of Canada's Scotiabank	• 3 banks nationalized	• None	• None	• None	Yes	No
Ecuador 11/1998-present	• 21 financial institutions were closed.	• 4 banks nationalized	• 1 merger of government-owned banks (CFN and BEV)	• Large banks were recapitalized by the government with ten-year Treasury bonds yielding 12% annual interest.	• None	Yes	Yes
Finland 9/1991-12/1994	• None	• 3 banks nationalized.	• 41 savings banks were merged into Savings Bank of Finland.	• Government offered capital support facility for deposit money banks ad injected up to 12% of the sector's regulatory prescribed capital. • 6 commercial banks, 67 savings banks and 57 cooperative banks received capital (1.6% GDP in 1992)	• None	Yes	No
Indonesia 7/1997-present	• 70 banks out of 237 closed.	• 13 banks nationalized. 4 large banks were nationalized early in the crisis and 9 were nationalized due to a failed private recapitalization program.	• 9 nationalized banks and 4 state banks.	• $67.8 billion of sovereign bonds issued, of which $44.8 billion recapitalized 4 banks, 4 nationalized banks, and 12 regional banks (47% of GDP).	• 1 pending	Yes	No

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Japan 6/1991-present	• 7 banks failed and were closed. 1997-1999. • 54 financial institutions shutdown (5 years ending in March 2000).	• 7 banks nationalized.	• 28 financial institution mergers	• Government recap scheme put into place in 1998 and 1999; ex ante recap; banks had to meet two criteria to qualify for public funds (1) Positive net worth (2) Ability to generate long-term profits. • Second recap, conditionality was more strictly adhered to.	• US banks purchased 1 Japanese bank and 2 securities companies in the period 1998-2000.	• Yes	• No
Korea 7/1997-present	• 5 banks were forced to exit the market through a "purchase and assumption formula" • 303 financial institutions shutdown (215 were credit unions)	• 4 banks nationalized.	• 9 out of 26 were absorbed by other banks.	• Government injected $50 billion to 9 commercial banks plus NBFIs (16%of GDP in 1998) and 3 major banks now are 80 percent controlled by the state. An additional $36 billion being made available for banks/NBFIs (11% of GDP).	• 1 bank sold to foreign owner with majority stake. 6 other banks now have significant foreign capitalization	• Yes	
Malaysia 4/1997-present	• None	• 1 banks nationalized.	• 36 local banks were merged into 10 groups.	• Danamodal injected $1.3 billion into 10 institutions, 1.6% of GDP in 1998.	N.A.	• Yes	• No

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México 12/1994 – 12/1997	• None	• 9 banks nationalized (of 34 commercial banks).	• 3 banks merged	• Government implemented two prams. (1) Temporary recapitalization program (PROCAPTE), (2) A loan repurchase. Recapitalization program under FOBAPROA. • Cost of recapitalization was 5.5% of GDP in 1995.	• In 1994 1% of bank assets were owned by foreigners, and by 1998, 18% of bank assets were owned by foreign banks • By 2002, 72 percent of financial system assets controlled by foreign banks	• Yes, The government allowed the use of a broad definition of capital.	• Yes
Russia 8/1998-12/1999	• 266 financial institutions closed in the period August 1998 to July 2001.	• 19 banks nationalized.	• 2 banks merged.	• The government recapitalized Sberbank, injecting .01% of GDP, and VTB injecting .41% of GDP in 1999. • In 1998 deposits from failing banks were transferred to Sberbank with additional support from the central bank	• No	• Yes, Nov. 1999: 4 out of 15 banks reviewed had negative tier 1 capital and 2 banks had ratios below 8%.	• No

TABLE 6
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Country and Crisis Dates	**Number of Banks and other financial institutions shut down**	**No. of Banks Nationalized**	**Bank Mergers**	**Public Funds injected during recapitalization (conditions attached and type of recap)**	**Extent of injections of private foreign capital**	**Did Capital Forbearance Occur**	**Was assistance provided to bank borrowers?**
Sweden 11/1991-12/1994	• None	• 2 banks nationalized.	• 2 banks merged.	• Government support in the form of capital contributions and blanket guarantees to troubled banks. • The government recapitalized Norbanken, Forsta Sparbanken and Gota group at a cost of 3% of GDP in 1992.	• None	Yes	
Thailand 3/1997-present	• 1 of 15 domestic banks shutdown. • 59 of 91 finance companies.	• 4 banks nationalized.	• 3 banks and 12 finance companies.	• Public recap programs were conditional on banks meeting strict loan loss provisioning standards and after write down of shareholder capital. • Government injected $1.7 billion into private banks and about $12 billion into public banks. $7.8 billion private funds injected as tier 1 capital. • The government spent 1.4% of GDP in 1998.	• 4 banks sold to foreigners, 2 pending.	• Yes, Regulatory forbearance: banks were allowed to delay loss recognition.	No

TABLE 6
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Country and Crisis Dates	Number of Banks and other financial institutions shut down	No. of Banks Nationalized	Bank Mergers	Public Funds injected during recapitalization (conditions attached and type of recap)	Extent of injections of private foreign capital	Did Capital Forbearance Occur	Was assistance provided to bank borrowers?
Turkey 11/2000-present	• 2 banks closed: Emlak Bank and Ulsal.	• 19 troubled private banks had been taken over by Saving Deposit Insurance Fund by Jan 2002. • Takeover of state bank Emlak Bank by Ziraat Bank (Turkey's largest abnk)	• Merger of 3 out of the 4 banks owned by the Saving Deposit Insurance Fund (SDIF) banks (Etibank, Interbank and Esbank) into a second transition bank called Etibank.	• State banks were recapitalized by the government in 2001. • For private banks the government will provide convertible subordinated loans to enhance bank capital positions.	• None	• Yes, 20 banks representing 60% of total banking sector assets still held less then 8% capital requirement by the end of 2001.	No

TABLE 7
REMAINING TASK FOR BANKING SYSTEM RESTRUCTURING

Country and Crisis Dates	**Percent of NPL as of most recent (as a percentage of total loans)**	**Assets remaining at AMC**	**Number of banks still held by the public sector (including the amount of assets).**
Argentina 12/2001- present	• 12.2 (Dec. 2001)	N.A.	• 3 banks.
Ecuador 11/1998-present	• 9.0 (March 2002) Some private banks have NPL of 30% of total loans.	N.A.	1 bank
Finland 9/1991-12/1994	Crisis resolved	• Arsenal still retained 21.6% of loans by the end of 1997.	N.A.
Indonesia 7/1997- present	• 12.4% (Feb. 2002)	• 95.8% as of March 2001. • During the first half of 2002 IBRA intends to sell its stock in restructured loans.	• 13 banks still in the public sector. Of the 13 banks 5 banks are in the process of merging. Partial privatization of Bank Central Asia and the 51% divestiture of Bank Niaga was approved.
Japan 6/1991- present	• 35 (Jan 2002)	• So far the RCC has not played a very active role in bank restructuring.	• All banks that were nationalized were privatized.
Korea 7/1997- present	• 3.1 (March 2002)	• 49.8% as of May 2001	• 3 banks held by the public sector. The government plans to privatize all banks by 2005.
Malaysia 4/1997- present	• 10.8 (March 2002) in the commercial banking sector; much higher in NBFI sectore	• 19.3% as of March 2001.	• No banks held by the public sector.
México 12/1994 –12/1997	• 11.4 (Dec. 1998)	• 95% of assets still remained by the end of 1998.	• 3 banks held by the public sector
Russia 8/1998-12/1999	N.A.	N.A.	• 11 banks held by the public sector
Sweden 11/1991-12/1994	• Crisis resolved	N.A.	N.A.
Thailand 3/1997- present	• 10.32 (Feb.2002)	• 16% remained by mid 2000.	• 2 banks pending sale.
Turkey 11/2000- present	• 17.6 (Nov.2001)	N.A.	• 6 banks held by the public sector

TABLE 8
DURATION AND FISCAL COST OF SYSTEMIC CRISES IN TWELVE COUNTRIES

	Duration of Crisis (in years)	**Fiscal Cost (as a percentage of GDP)**
Argentina	just beginning	…
Ecuador	6 (and counting)	13.0
Finland	4	11.0
Indonesia	5 (and counting)	55.0
Japan	11 (and counting)	20.0
Korea	5 (and counting)	28.0
Malaysia	5 (and counting)	16.4
Mexico	3	19.3
Russia	1	…
Sweden	4	4.0
Thailand	5 (and counting)	32.8
Turkey	2 (and counting)	18-20

Source: Honohan and Klingebiel (2003), Caprio and Klingebiel (2002).

TABLE 9
ESTIMATES OF ACCUMULATED OUTPUT LOSS IN SELECTED CRISIS COUNTRIES

	Assumed Dates of Crisis[a]	GAP1[b]%	GAP2[c]%	GAP3[c]%	Mean of Reported GAP Estimates
Argentina	2001-	…	…	…	…
Ecuador	1999-	…	…	…	…
Finland	1991-93	22.4	44.9	24.6	30.6
Indonesia	1997-98[d]	24.5	20.1	…	22.3
Japan	1992-98 [d]	24.1	71.7	30.7	42.2
Korea	1997-98 [d]	16.7	12.8	15.7	15.1
Malaysia	1997-	…	…	…	…
Mexico	1994-95	9.5	5.4	12.0	9.0
Russia	1998	…	…	…	…
Sweden	1991	11.8	3.8	2.5	6.0
Thailand	1997-98 [d]	25.9	28.1	…	27.0
Turkey	2001	…	…	…	…

Source: Hoggarth, Reis, and Saporta (2001).

[a] Caprio and Klingebiel (1999) definition of crisis; length of crisis here defined as period of time during which output growth is different from average output growth before crisis.
[b] The cumulative difference between trend and actual output *growth* during the crisis period. Trend is the average arithmetic growth of output in the three-year prior to the crisis. End of crisis is when output growth returns to trend.
[c] The cumulative difference between the trend and actual *levels* of output during the crisis period. Beginning and end of crisis is the Caprio and Klingebiel (1999) definition. The counterfactual path for output is based on a Hodrick-Prescott filter ten years prior to the crisis (GAP2), and OECD forecasts of GDP growth listed in country reports one year prior to the start of the crisis (GAP3). In two cases, Japan and Mexico, the country reports give projections that covered the whole crisis period. In all other cases the reports give projections for two years ahead. In these cases, the counterfactual growth for the later years of the crisis is assumed to equal the OECD projection for the second year of the crisis.
[d] Crisis still unfolding.